

In the Claims:

Please amend the claims as follows:

Claims 1-4. (Cancelled)

5. (Original) A method for selecting an impulse response for a spectrally constrained impulse shortening filter in a multiple carrier communication system, the method comprising:  
measuring received noise power spectral density;  
computing a cost function using the noise power, the cost function being dependent on the impulse response;  
reducing the dimensionality of a space over which the cost function is defined; and  
minimizing the cost function.

6. (Original) The method of claim 5, wherein the communication system includes a discrete Fourier transform and the noise power spectral density is measured at an output of the discrete Fourier transform.

7. (Original) The method of claim 5, wherein the cost function is used to compute coefficients for the spectrally constrained impulse shortening filter.

Claims 8-33. (Cancelled)

34. (Original) Software on a processor readable medium comprising instructions for causing a processor in a communication system to perform the following operations:  
measure received noise power spectral density;  
compute a cost function using the noise power, the cost function being dependent on an impulse response of a spectrally constrained impulse shortening filter;  
reduce the dimensionality of a space over which the cost function is defined; and  
minimize the cost function.

35. (Original) The software of claim 34, wherein the cost function is used to compute coefficients for the filter.

36. (New) A method for equalizing a channel in a multiple carrier communication system, the channel being configured to receive a signal and including a spectrally constrained impulse shortening filter, the method comprising:

- measuring received noise power spectral density;
- computing a target spectral response having a magnitude constraint that is based on the measured noise power spectral density;
- selecting a frequency response of the spectrally constrained impulse shortening filter based on the target spectral response; and
- filtering the communication signal with the spectrally constrained impulse shortening filter.

37. (New) An article comprising a machine-readable medium storing machine-readable instructions that when applied to the machine cause the machine to:

- measure received noise power spectral density;
- compute a target spectral response having a magnitude constraint that is based on the measured noise power spectral density;
- select a frequency response of a spectrally constrained impulse shortening filter based on the target spectral response; and
- filter a communication signal with the spectrally constrained impulse shortening filter.

38. (New) An article comprising a machine-readable medium storing machine-readable instructions that when applied to the machine cause the machine to:

- compute a target spectral response having a magnitude constraint that is based on measured noise power spectral density;
- shorten an impulse response of a channel in a multiple carrier communication system so that a significant part of an energy of the impulse response is confined to a region that is shorter than a target length; and

filter a signal having a cyclic prefix based on the target spectral response.